



Legislative Audit Division

State of Montana

Report to the Legislature

October 2002

Information Systems Audit

Automated Licensing System (ALS)

Department of Fish, Wildlife and Parks

This report contains one recommendation addressing:

- ▶ Incorrect ALS fee amounts for youth and senior resident season fishing licenses.
- ▶ ALS ability to issue fish and game licenses without ensuring prerequisites are met.

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INFORMATION SYSTEM AUDITS

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Members of the IS audit staff hold degrees in disciplines appropriate to the audit process. Areas of expertise include business, accounting and computer science.

IS audits are performed as stand-alone audits of IS controls or in conjunction with financial-compliance and/or performance audits conducted by the office. These audits are done under the oversight of the Legislative Audit Committee which is a bicameral and bipartisan standing committee of the Montana Legislature. The committee consists of six members of the Senate and six members of the House of Representatives.

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October 2002

The Legislative Audit Committee
of the Montana State Legislature:

This report contains the results of the Information Systems audit of the Automated Licensing System (ALS) operated by the Department of Fish, Wildlife and Parks. We examined the ALS process to accumulate, process, and report license data and revenue collections in the license types currently issued through ALS. We also performed a limited ALS implementation review.

The report contains one recommendation to correct license amounts and license prerequisite requirements. Written response to the audit recommendations are included at the end of the report.

We acknowledge and appreciate the cooperation and assistance of the Fish, Wildlife and Parks Information Technology staff during the course of this audit.

Respectfully submitted,

(Signature on File)

Scott A. Seacat
Legislative Auditor

Legislative Audit Division

Information System Audit

Automated Licensing System (ALS)

Department of Fish, Wildlife and Parks

Members of the audit staff involved in this audit were Charles Nemec,
David P. Nowacki, and Victor C. Valgenti.

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Appointed and Administrative Officials

Department of Fish, Wildlife and Parks

Jeff Hagener, Director

Dan Ellison, Chief of Administration & Finance

Barney Benkelman, Information Technology Bureau Chief

Fish, Wildlife and Parks Commission

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Department of Fish, Wildlife and Parks

At the request of Legislative Audit Division financial-compliance audit staff, an information systems audit was engaged to provide assurance over operation and implementation of Phase I of the Automated Licensing System (ALS), administered by the department of Fish, Wildlife and Parks (FWP).

The primary objective was to determine the accuracy and continuity of the ALS process to accumulate, process and report license data and revenue collections for the license types currently issued through ALS. We also performed a limited ALS implementation review to determine if ALS is meeting FWP management and public expectations at point-in-time for July 2002.

FWP contracted to design, develop, and implement the Automated Licensing System (ALS). The system is intended to allow FWP management and staff to better administer its licensing business process by making available timely, accurate, and meaningful information for decisions and planning. System functionality includes automating the licensing process, managing special license and recreational permit drawings, operating a license preference system, aiding law enforcement by providing up-to-date license information, and directly communicating with license providers and license holders.

Overall, except as discussed in the recommendation identified, ALS operates using the correct license and permit fees, issues licenses and permits in compliance with state statute and FWP rules, and adequately accumulates and reports license activity.

Recommendation #1

We recommend that FWP staff change ALS database resident fishing license fee structure to be consistent with state law, and change the ALS program instructions so that each license is issued only after the statutory prerequisites are met.

Report Summary

Our second objective included determining whether ALS delivered results, to-date, consistent with FWP management and user expectations.

Since ALS is a new system, it has experienced startup problems. Some faults were caused by insufficient system capacity. Capacity could not be accurately determined until ALS was operating. Other issues are specific to certain providers and are caused by technical conflicts. Overall, there are no events that occurred which are unusual when new systems are rolled out to production.

Background

Introduction

Private vendors have issued Fish Wildlife and Parks (FWP) hunting, fishing and recreational licenses since 1901 by writing or typing information on a piece of paper. This process of writing licenses and sending fee collections and license details to FWP each month continued until the manual system was replaced by a computer-based licensing system in 2002. The 1997 Legislature approved a proposal to design, develop and implement an automated licensing system. A \$2.7 million biennial appropriation was approved, funded by two-thirds hunting and fishing license revenue, and one-third federal funds. The 1999 and 2001 Legislatures approved additional funding to finish and operate the system for a projected cost of approximately \$8.8 million.

FWP contracted to design, develop, and implement the Automated Licensing System (ALS). The system is intended to allow FWP management and staff to better administer its licensing business process by making available timely, accurate, and meaningful information for decisions and planning. System functionality includes automating the licensing process, managing special license and recreational permit drawings, operating a license preference system, aiding law enforcement by providing up-to-date license information, and directly communicating with license providers and license holders.

ALS is a database application that operates on point of sale (POS) devices at license providers' business locations and on hardware maintained by the Department of Administration, Information and Technology Services Division in Helena. POS devices, which are owned by FWP, transmit information to Helena to process and record license and permit sales. The public receives a printed-paper license or permit copy at the provider's location once the transaction is complete.

ALS is being implemented in three phases:

Phase I – ALS will issue general unlimited licenses including: conservation, fishing, deer, elk, upland bird, bear, turkey, and

Background

mountain lion; parks passports, and state lands recreational use permits.

Phase II – ALS will issue special licenses with prerequisites, limits, or special drawings such as moose, sheep, goat, antelope, and Smith River permits.

Phase III – ALS will manage merchandise sales, any remaining licenses, law enforcement violations, and information exchange with SABHRS (the state's primary accounting system).

ALS Phase I became operational March 1, 2002 after a four-month pilot process period. FWP budgeted \$4,476,408 for ALS development and implementation for Phase I. As of July 2002, FWP has paid \$2,463,890 in ALS Phase I contracted service expenditures. As of July 2002, 400 license providers were able to issue 32 general licenses, state parks passports, state lands use permits and three certifications, for a total of 706,089 licenses costing \$9,785,675.

Audit Objectives

At the request of LAD financial-compliance audit staff, an information systems audit was engaged to provide assurance over operation and implementation of Phase I of the Automated Licensing System.

The primary objective was to determine the accuracy and continuity of the ALS process to accumulate, process and report license data and revenue collections for the license types currently issued through ALS. We also performed a limited ALS implementation review to determine if ALS is meeting FWP management and public expectations at point-in-time for July 2002.

Audit Scope and Methodology

The audit was conducted in accordance with government auditing standards published by the United States General Accounting Office. Our audit work was limited to ALS licensing processes implemented in Phase I and confirming the reasonableness of ALS processing.

Assurance Over Operations

ALS License Processing

Overall, except as discussed below, ALS operates using the correct license and permit fees, issues licenses and permits in compliance with state statute and FWP rules, and adequately accumulates and reports license activity. To confirm the reasonableness of ALS license processing, our audit tests included the following:

License or Permit Fee Amounts and Prerequisites

State statute defines the power of the FWP Commission to set license fees and license prerequisites in accordance with state statutes. We designed the following tests to confirm that ALS operates with accurate license or permit fees and prerequisites.

Test: Confirm that Phase I ALS license or permit fees and prerequisites are in accordance with state statute.

Method: We extracted the license and permit fee amounts from the database and compared the amounts to statute and FWP license and permit fee schedules. We extracted ALS license prerequisites from the database and compared them to statutory requirements and observed the prerequisites operating within ALS.

Result: License and fee amounts exist within ALS and are consistent with the corresponding statutory fee amounts with one exception for Montana Resident Season Fishing Licenses. In addition, license prerequisites exist within ALS, but can be avoided so that licenses can be issued without proper prerequisites.

Discussion: There are two ways in which Montana residents can be incorrectly issued season fishing licenses. ALS uses incorrect resident season fishing fee amounts for persons who already hold a conservation license and are acquiring a fishing license. According to state statute, senior and youth Montana Resident Season Fishing Licenses are free, and youths between the ages of 15 to 17 years are charged \$6.50 when they already possess a conservation license. However, the ALS database fee amount is set at \$13.00 for all resident season fishing licenses including both youth licenses and the senior license. The incorrect amounts are in ALS because the amounts were used as a fix to avoid a system error message resulting

Assurance Over Operations

from a problem with fishing license accounting codes. FWP staff are aware of the incorrect amounts and said they are working to resolve the problem.

Another way ALS can incorrectly issue season fishing licenses is based on age prerequisites. Some license purchases require prerequisite conditions be met prior to issuance. Prerequisites may be based on residency, age range, and holding other necessary licenses. ALS is intended to use prerequisites to ensure the correct license is issued. However, we determined the current ALS process does not prohibit issuing a license when a prerequisite is not met. For example, for resident season fishing licenses, a person's age is a prerequisite for issuing the correct license. FWP staff said ALS does not use the person's age to ensure the right license is being sold to the person. As a result, ALS does not prevent issuing incorrect adult licenses costing \$13 to youths and seniors who should be paying \$6.50 or receiving free licenses. Because ALS does not enforce all age prerequisites, providers are able to sell residents the wrong type fishing license which results in the person being overcharged. Other licenses may be issued without a person meeting the correct prerequisites. We were able to circumvent prerequisites and successfully issue a big game license type without meeting three prerequisite conditions. This occurred because current ALS procedure has the POS device calling the database server for information on the license type selected. The server returns any prerequisite information. If the license type is changed prior to the customer checking out, the POS device does not call the server about the license change before issuing the different license. Since the POS device performs no final check, a license may be issued without the person meeting the proper prerequisites. FWP staff acknowledged that there is no final prerequisite check prior to issuing the license.

We searched the ALS database and identified 127 people younger than 18 and older than 62 were issued adult licenses as of the end of July, 2002. These individuals were incorrectly charged \$1,085.50 for adult licenses.

Recommendation #2

We recommend that FWP staff :

- A. Change ALS database resident fishing license fee structure to be consistent with state law.**
- B. Change the ALS program instructions so that each license is issued only after the statutory prerequisites are met.**

Database Maintenance

FWP personnel use maintenance forms to create or change fee amounts or license details within the ALS database.

Test: Confirm ALS maintenance forms correctly access the appropriate database tables and objects.

Method: We examined the automated license maintenance forms and identified the fields that link to the database table. We extracted the fields' database references and determined the appropriate database elements are being updated for the related license items.

Result: No exceptions were noted.

POS Device and Database Information Exchange

The POS device exchanges license or permit and purchaser information with the database during an ALS transactions.

Test: Confirm the programming code used by the POS device to record license and permit issuance, correctly updates the system table information at the Helena office.

Method: We extracted POS device instructions from ALS to confirm both the device processing and information referencing correctly updates the ALS database. We extracted device file exchanges with the database to observe that the appropriate database elements were accessed.

Result: No exceptions were noted.

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ALS Revenue

ALS tracks provider sales and uses this information to collect license and permit fees from providers.

Test: Confirm the revenue process captures and reports the appropriate provider license and permit activity for the weekly collection period.

Method: We extracted the ALS revenue program and reviewed the instructions and database references to determine that ALS accumulates and reports the correct license activity for the collection period. We ran independent queries to simulate the revenue program reporting.

Result: No exceptions were noted.

ALS Implementation Status

Our second objective included determining whether ALS delivered results, to-date, consistent with FWP management and user expectations.

Since ALS is a new system, it has experienced startup problems. Some faults were caused by insufficient system capacity. Capacity could not be accurately determined until ALS was operating. Other issues are specific to certain providers and are caused by technical conflicts. Overall, there are no events that occurred which are unusual when new systems are rolled out to production.

ALS implementation is meeting the implementation schedule, expected costs, and FWP and public expectations.

Comparison to Manual Process

FWP management identified the following manual system aspects where ALS provides improved efficiency. Through observation of ALS operations, and interviews with FWP personnel, and on-site visits to license providers, we determined the following.

- ▶ Timeliness, Accuracy, and Completeness of the Sportsman Database.

ALS data is entered once at the time of license sale instead of being recorded by both the license provider and FWP staff. The single entry reduces the opportunity for human error or duplication, and information is current because ALS is updated with licensee's information at the time of license sale. Before ALS, staff used carbon copies from license sales to manually enter information into the Sportsman's database. The manual process was time consuming, subject to human error, allowed duplication, and license information was added to the database several months after the license sale.

► Flexibility of System Reporting.

ALS generates a number of daily and weekly license activity reports available to both providers and FWP staff. ALS reporting is flexible and can target a single license, date, provider, or licensee information, or can expand to report combinations of license details for defined periods within the license year. Prior to ALS, only limited license information was available through a small number of reports. The reports were not immediately available and the report contents provided limited information that did not offer the level of detail for provider sales or specific license activity. Reports were time consuming to change and develop.

► Physical Storage Requirements.

ALS license stock is similar in size and shape to a roll of adding machine paper and is available in one format instead of the different general license and permit formats that could be consigned to license providers. FWP is able to store inventory in a fraction of space compared to previous storage requirements.

Initially, FWP staff planned to use waterproof paper for fishing license stock. However, the printing device's inability to cut the paper into individual licenses from the roll of printing stock eliminated this option.

FWP manual license storage includes the carbon copies of issued licenses returned to FWP from providers. During the license year, carbon copy volume can reach 1.5 million pieces of paper. Current and prior year license copies are stored at FWP headquarters in Helena and copies for three prior years are archived using FWP warehouse space. FWP staff organized and stored the copies for use in updating the Sportsman's database and by law enforcement. As FWP makes the transition to ALS,

Assurance Over Operations

paper storage will no longer be necessary; license information will be stored electronically.

▶ License Inventory.

Currently, FWP staff have decided not to change ALS license stock details each year meaning inventory will not become obsolete.

Manual system licenses were inventoried by both FWP and the provider so licenses could be accounted for and availability could be monitored. FWP personnel estimate license use to determine printing order size and balance the cost of printing excess licenses with the risk that demand could exceed the number of licenses printed. Providers also had to monitor inventory levels to determine if stock levels meet public demand. Staff speculate that outdated stock costs will be less than past costs of outdated license books.

Performance

We compared the following performance indicators to FWP management expectations.

Processing Capacity

Since Phase I implementation in March 2002, there have been two occurrences where processing capacity has failed system demand due to limited memory and available database space. FWP and Information and Technology Services Division staff are monitoring use and have increased the processing capacity to avoid another occurrence.

Maximum capacity is not measured so we examined ALS records for licenses issued each day for the five-month period beginning March 2002 and ending in July. For that period, ALS processed an average of 4,522 items per day and processed a high volume of 23,138 licenses in a single day. ALS is currently meeting FWP staff expectations of processing all data without interruption.

Productivity

We observed licenses being issued in three to four minutes when ALS is operated by a knowledgeable person and when the licensee is already present in the Sportsman's database. Licensees new to the database take several minutes longer because personal information must be entered to the system. This compares favorably with FWP

management expectation that ALS can issue licenses in about the same amount of time as the manual method.

Offline and system downtime can be caused by a variety of reasons. The number of telephone service providers and differing levels of technical infrastructure create problems for operating the ALS device. The device's communication hardware and software have experienced startup problems that FWP and contractor personnel have remedied. Since ALS does not have a history of offline time we used an indirect method to gauge system availability. Providers manually issue licenses as a backup procedure when ALS is not available. We compared the number of off-line licenses issued to total licenses issued to measure system availability. We used the five-month operating period beginning with March 2002 and ending with July for this comparison. The average percent of offline licenses providers issued was 2 percent of the total items processed by the system.

While ALS continues to have periods when it is unavailable to the public, the number of offline licenses issued during these periods indicates the frequency of downtime, while certainly inconvenient to the public and provider, is not significant.

Public Comment

We reviewed media articles, public comments and interviewed license providers for their responses to the following:

- ▶ System Response Time. Clerks stated that time to issue a license is about the same as the prior method for a person who is new to the database. ALS is quicker than the manual method for persons already recorded in the database and for multiple licenses. The original configuration required dedicated phone lines; however, the vendor's break-even point did not justify the means. Clerks mentioned the device dial-up time to Helena could add extra time to the process. Clerks commented that licenses did not take more time to issue than the manual process.
- ▶ Ease of operation including managing license prerequisites, cancellations, voids. Clerks' comments varied from "easy" to "difficult," with one clerk saying that ALS is complex at first but after working with it for a few days, it was relatively simple. We

Assurance Over Operations

determined that clerks' ALS navigation skills and commitment to learning ALS resulted in how effective they were at operating ALS.

- ▶ System reliability. Providers cited the amount of downtime as a problem. Providers said downtime could be as long as an hour or two but could not be more specific about the number of days downtime is experienced. One provider said the two-hour downtime occurred on one day.
- ▶ Level of Support. ALS has three help lines, one each for devices, licenses, and technical support. Providers had mixed responses as to the effectiveness of help lines, but stated help lines are available and FWP regional staff had also provided assistance.
- ▶ Effectiveness of Training including operator's manual, daily messages, training modes. FWP offers regional and onsite instruction, an operator's manual, and ALS has a training mode where clerks can practice issuing licenses. Providers had mixed responses on training. Providers who had committed to ALS training found it effective.
- ▶ Reduction in license storage requirements, number of different license types, and effort to track inventory. Providers liked the reduction in license book inventory responsibilities.
- ▶ Clerk impressions of public satisfaction. Providers' responses varied according to their opinion of ALS. Providers who successfully operate ALS state that the public is satisfied with ALS. Providers with mixed results operating ALS state that the public is not satisfied with the increased time to issue a license.

Department Response



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September 27, 2002

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LEGISLATIVE AUDIT DIV.

Mr. Charles Nemec, Senior Auditor
Legislative Audit Division
Helena, MT 59620

Dear Mr. Nemec:

The Department of Fish, Wildlife & Parks' (FWP) has reviewed the audit report issued on the Automated Licensing System (ALS). The department's response to the two recommendations follow. For convenience, each recommendation is excerpted and the department's response follows.

Recommendation #1

We recommend that FWP staff:

- A. **Change the database resident fishing license fee structure to be consistent with state law.**

Response:

Concur.

The 1999 Legislature created new licenses, at reduced costs, for resident youth ages 15-17, effective for issue beginning March 1, 2001. These licenses had a different accounting disbursement than the counterpart "adult" licenses. ALS design was in it's final stages, at that time. There was no programming in place to allow disbursement of a youth license to a different accounting entity than its adult counterpart. While setting up control tables for the pilot ALS system at the end of 2001, FWP ALS staff recognized this requirement and developed a solution of user selection of an appropriate item as opposed to complete system control. A system enhancement was defined to resolve this issue. However, the requested fix was not accomplished prior to license year 2002, and became apparent during the audit.

A software fix to resolve this problem is scheduled for delivery late next month. It will be implemented into the production environment as soon as it has been thoroughly tested and

debugged. Adjustments to the cost tables will be made immediately upon migration to production in order to prevent further issuance of a license with an incorrect cost based on the customer's age.

In addition, the department is researching how to refund the over-charge for the 127 individuals affected by this problem.

Another problem cited in your report was ALS using incorrect resident season fishing fee amounts for persons who already hold a conservation license and are acquiring a fishing license. ALS is designed to allow a "donation" of the cost of the season fishing license when a resident youth, senior, or disabled person already holds a conservation license where free "implied" privileges of season fishing already exist. If that purchaser subsequently chooses to acquire a season fishing license when the privilege is already possessed, ALS is programmed to prompt, "You already have an implied season fishing privilege. Are you sure you want to pay for this license?" If the response to the prompt is "yes", then the season fishing license is sold to the customer at full cost. The privilege type is then stored in the database as "donated" for this kind of transaction.

The ALS team recently walked through this process in the test environment and found the system responding as anticipated. However, FWP recognizes that random software bugs have directly impacted implied privileges. It is our belief that your audit team encountered a discrepancy of this type. Regardless, FWP agrees the figures maintained in the cost table for the season fishing license will be set to assess the correct cost for a resident youth under age 15, youth ages 15-17, adults ages 18-61, and seniors ages 62 and older. This process will be completed with the software change described in the paragraphs above, while continuing to ensure an individual is allowed to donate license fees if they desire.

- B. Change the ALS program instructions so that each license is issued only after the statutory prerequisites are met.**

Response:

Concur.

The design and manner of communication used by the ALS sales device and the central database requires two separate phone calls. Reprocessing of already validated transactions when changed at a later step, requires re-entry of information by license agents. FWP identified this flaw during system integration testing. The impact of fixing this problem would not allow FWP to meet expected pilot dates for ALS implementation. The department made a conscious decision to proceed based on not forcing license agents to make multiple phone calls and reentry of data

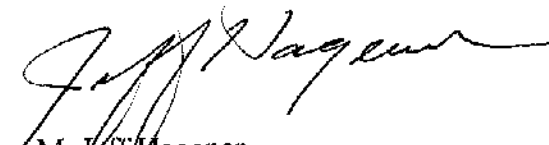
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when accidentally deleting a license prerequisite. FWP also noted that a solution needed to be implemented as soon as feasible.

Improvements since implementation to the "call to database" processes have made it much more feasible to correct this problem. Functionality planned for Phase 2 ALS, anticipated to be in place by March 1, 2003, will ensure prerequisite licenses cannot be deleted at check out time.

FWP appreciates the opportunity to respond to these recommendations, and the professional manner in which the audit was conducted.

Sincerely,



M. Jeff Hagener
Director